DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Matthew K. Gage on 5/11/2009The application has been amended as follows:

Claim 1:

Claim 1 line 2, "device" has been changed to –network device--.

Claim 1 line 3, "device" has been changed to –network device,--.

Claim 1 line 5, "device" has been changed to –network device,--.

Claim 1 line 12, "device" has been changed to –network device,--.

Claim 30:

Claim 30 line 1, "device" has been changed to –network device--.

Claim 35:

Claim 35 line 1, "device" has been changed to --network device--.

Claim 36:

Claim 36 line 1, "device" has been changed to --network device--.

Claim 37:

Claim 37 line 1, "device" has been changed to --network device--.

Claim 38:

Claim 38 line 1, "device" has been changed to --network device--.

Claim 39:

Claim 39 line 1, "device" has been changed to --network device--.

Claim 40:

Claim 40 line 1, "device" has been changed to --network device--.

Claim 41:

Claim 41 line 1, "device" has been changed to --network device--.

Claim 42:

Claim 42 line 1, "device" has been changed to --network device--.

Claim 43:

Claim 43 line 1, "device" has been changed to --network device--.

Claim 44:

Claim 44 line 1, "device" has been changed to --network device--.

Claim 45:

Claim 45 line 1, "device" has been changed to --network device--.

Claim 46:

Claim 46 line 1, "device" has been changed to --network device--.

Claim 47:

Claim 47 line 1, "device" has been changed to --network device--.

Claim 48:

Claim 48 line 1, "device" has been changed to --network device--.

Claim 49:

Claim 49 line 1, "device" has been changed to --network device--.

Claim 50:

Claim 50 line 1, "device" has been changed to --network device--.

Claim 51:

Claim 51 line 1, "device" has been changed to --network device--.

Claim 52:

Claim 52 line 1, "device" has been changed to --network device--.

Claim 53:

Claim 53 line 1, "device" has been changed to --network device--.

Response to Arguments

1. Applicant's arguments, of the Remarks section filed 5/27/2009 (specifically, see page 16 of remark section), with respect to the 35 USC 112 second paragraph rejections of claims 5-6, 34-36 and 58-59 have been fully considered and are persuasive. The 35 USC 112 second paragraph rejections of claims 5-6, 34-36 and 58-59 have been withdrawn.

2. Applicant's arguments of the Remarks section filed 5/27/2009 (Specifically, see page 17 of remark section), with respect to the 35 USC 112 second paragraph rejections of claims 1, 5-25, 28-30, 34-54 and 58-78 have been fully considered and are persuasive. The 35 USC 112 second paragraph rejections of claims 1, 5-25, 28-30, 34-54 and 58-78 have been withdrawn.

3. Applicant's arguments of the Remarks section filed 5/27/2009 (Specifically, see page 18 of remark section), with respect to the 35 USC 112 second paragraph rejections of claims 5, 6 and 34-36 have been fully considered and are persuasive. The 35 USC 112 second paragraph rejections of claims 5, 6 and 34-36 have been withdrawn.

4. Applicant's arguments of the Remarks section filed 5/27/2009 (Specifically, see page 19 of remark section), with respect to the 35 USC 112 second paragraph rejections of claims 34-36 have been fully considered and are persuasive. The 35 USC 112 second paragraph rejections of claims 34-36 have been withdrawn.

Allowable Subject Matter

1. Claims 1, 6-25, 28-30, 35-54 and 59-75 are allowed.

Reason for Allowance

1. The following is an examiner's statement of reasons for allowance:

The prior art of record does not teach the following:

In regards to claim 1 the prior art does not teach dynamically determining with a network device, a time epoch based on the loading condition by computing a transmission time to deliver the amount of data in the transmit queue, computing a system load in units of time by comparing the transmission time to a constant lower limit and selectively setting the system load based on the comparison, and computing the time epoch based on the system load and a previous time epoch, wherein selectively setting the system load comprises setting the system load equal to the transmission time when the transmission time exceeds the constant lower limit; and

transferring, with the device, the packet from the one of the plurality of hold queues to the transmit queue for delivery to a network device via a downstream channel.

In regards to claim 25 the prior art does not teach dynamically determine a time epoch based on the loading condition by computing a transmission time to deliver the amount of data in the transmit queue, computing a system load in units of time by comparing the transmission time to a constant lower limit and selectively setting the system load based on the comparison, and computing the time epoch based on the system load and a previous time epoch, wherein selectively setting the system load comprises setting the system load equal to the transmission time when the transmission time exceeds the constant lower limit; and transfer, at the dynamically determined time epoch, the packet from the one of the plurality of hold queues to the transmit queue for delivery to a network device via a downstream channel.

In regards to claim 30 the prior art does not teach dynamically determines a time epoch based on the loading condition by computing a transmission time to deliver the amount of data in the transmit queue, computing a system load in units of time by comparing the transmission time to a constant lower limit and selectively setting the system load based on the comparison, and computing the time epoch based on the system load and a previous time epoch, and transfers, at the dynamically determined time epoch, the packet from the one of the static number of hold queues to the transmit queue for delivery to a network device via a downstream channel, wherein the control unit selectively sets the system load by setting the system load equal to the transmission time when the transmission time exceeds the constant lower limit.

In regards to claim 54 the prior art does not teach a load monitor that monitors a loading condition of the transmit queue by monitoring an amount of data residing within the transmit queue and dynamically determines a time epoch based on the loading condition by computing a transmission time to deliver the amount of data in the transmit queue, computing a system load in units of time by comparing the transmission time to a constant lower limit and selectively setting the system load based on the comparison, and computing the time epoch based on the system load and a previous time epoch, wherein the load monitor selectively sets the system load by setting the system load equal to the transmission time when the transmission time exceeds the constant lower limit, and a queue assignment module that stores a packet to one of a plurality of hold queues, and transfers, at the dynamically determined time epoch, the packet from the one of the plurality of hold queues to the transmit queue for delivery to the cable modem via a downstream channel.

The prior art alone or in combination fails to jointly suggest or teach the claimed combination of features as taught by the instant application. Therefore claims 1, 6-25, 28-30, 35-54 and 59-75 are to be deemed allowable over prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SALMAN AHMED whose telephone number is (571)272-8307. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Salman Ahmed/
Examiner, Art Unit 2419